



Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

MULTIPLE EVENT HARD TARGET FUZE TRANSITIONS TO UK'S PRECISION GUIDED BOMB PROGRAM



The Munitions Directorate transitioned to the United Kingdom's (UK) Precision Guided Bomb (PGB) program the first low-cost, all-electronic smart penetration fuze with improved ability over existing fuzes to survive rigid body deceleration shock and discriminate target layers. The fuze can survive high impact conditions, increasing the ability of penetrating munitions to defeat underground bunkers. It provides an accurate and low-cost solution to fuzing for hard target defeat. The PGB program will enhance the potential to transition this technology to future US weapon systems, including high-speed weapons.



Air Force Research Laboratory
Wright-Patterson AFB OH

Accomplishment

Alliant TechSystems (ATK) Ordnance and Ground Systems in Plymouth, Minnesota, and Thales Missile Electronics (TME) in Basingstoke, UK, developed the multiple event hard target fuze (MEHTF) smart penetrator fuze for the directorate at Eglin Air Force Base. The MEHTF smart penetrator fuze uses an accelerometer to measure distance traveled and to count voids and layers.

The PGB fuze development strives to meet current and future UK requirements for precision weapons, including intelligent fuzing. Using a partnering arrangement, ATK and TME are developing and manufacturing the PGB fuze utilizing MEHTF technology. The ATK-TME team modified the MEHTF design to meet the PGB program's needs. This technology transition was facilitated by a US-UK government-to-government project arrangement to share information and hardware, and perform testing in the smart fuzing technology area.

Background

The MEHTF program was initiated to address anticipated fuzing needs for future penetrating weapons and was structured to identify and address specific technology limitations associated with several future applications requiring a smart penetration fuze. These limitations include: (1) survivability under severe shock loads associated with high-speed penetrator impact, (2) reduced-size fuze wells of future small penetrators, (3) high cost of previous smart fuzes not competitive with time-delay fuzing, (4) limited accuracy in target media discrimination, and (5) future need for a multiple event capability for complex multiple-function warheads.

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (04-MN-08)